

2021 INDOT Geotechnical Conference

Khalil I. Dughaish, PE, MSCE

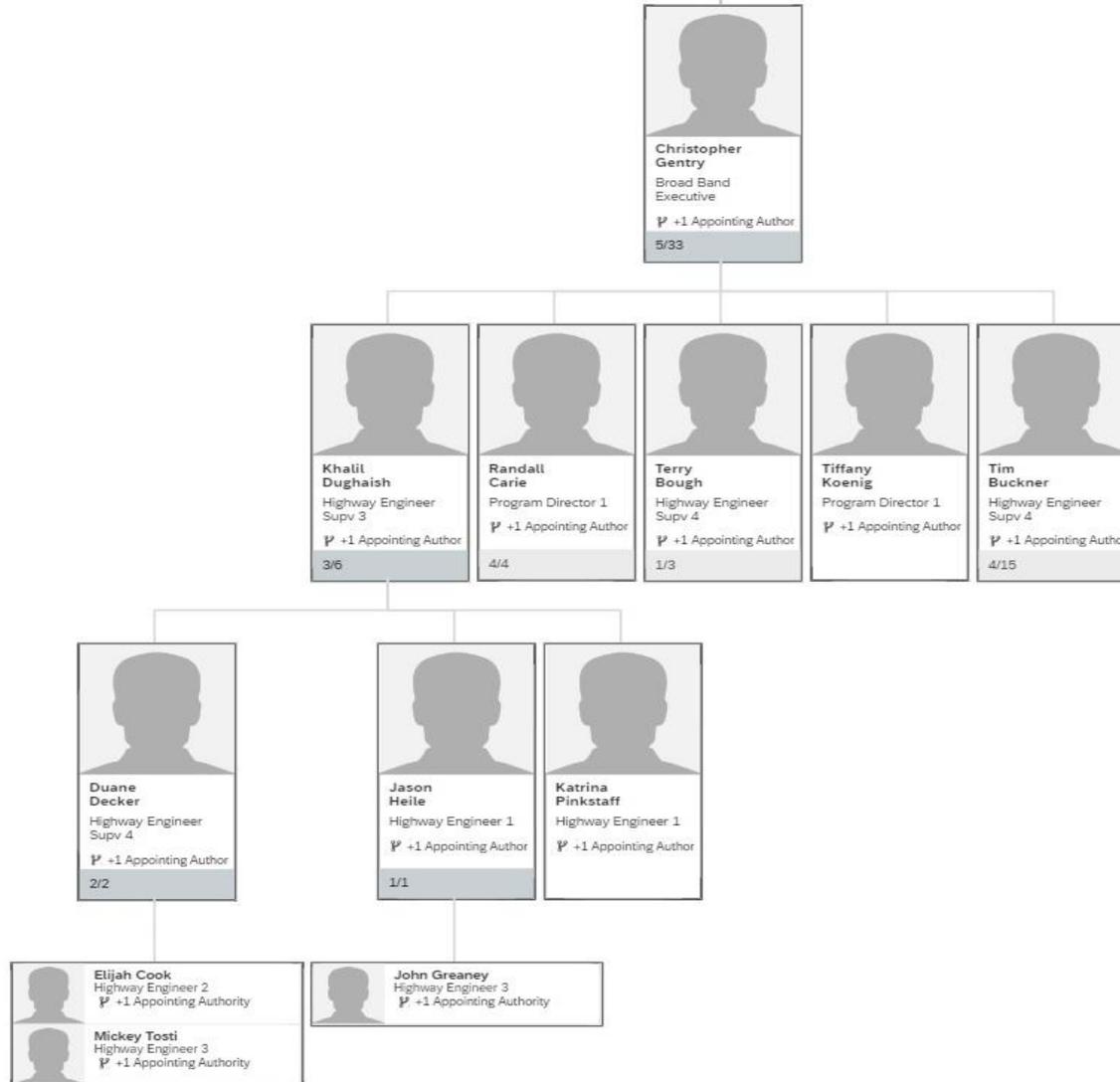
System Asset Manager

Vincennes District

Feb.24, 2021

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Org Chart: Christopher Gentry



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- Chris Gentry – Technical Services Director
- Khalil Dughhaish – System Asset Manager
- Katrina Pinkstaff – Pavement Asset Engineer
- Jason Heile – Bridge Asset Engineer
- John Greaney – Culvert Asset Engineer
- Duane Decker – Scoping Manager
- Mickey Tosti – Scoping Engineer
- Eli Cook – Scoping Engineer
- Vacant – Technical Services Asset Engineer
- Vacant – Engineer Assistance

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➤ Core Duties and Responsibilities:

- **PLANNING, PLANNING, PLANNING; DATA SCREENING, DATA SCREENING; DATA SCREENING**
- Continuous Assessment of the Assets Data Conditions: Pavement, Bridges, Large Culvert, Small Culverts, Slides, Traffic Safety & Mobility
- Prioritizing the Needs of our Assets
- Prepare Projects **Abbreviated Engineer's Reports (AER) and supporting documentations.**
- Statewide Deliberation thru the Asset Teams (Roadway & Bridge, Safety & Mobility)
- Work with Capital Program Department to program the projects.
- Work with Maintenance To Plan and Program certain activities needs.
- Being part of the team during the process of programming, design & construction
- Evaluate Customer requests that require Technical and Engineering Assessment.

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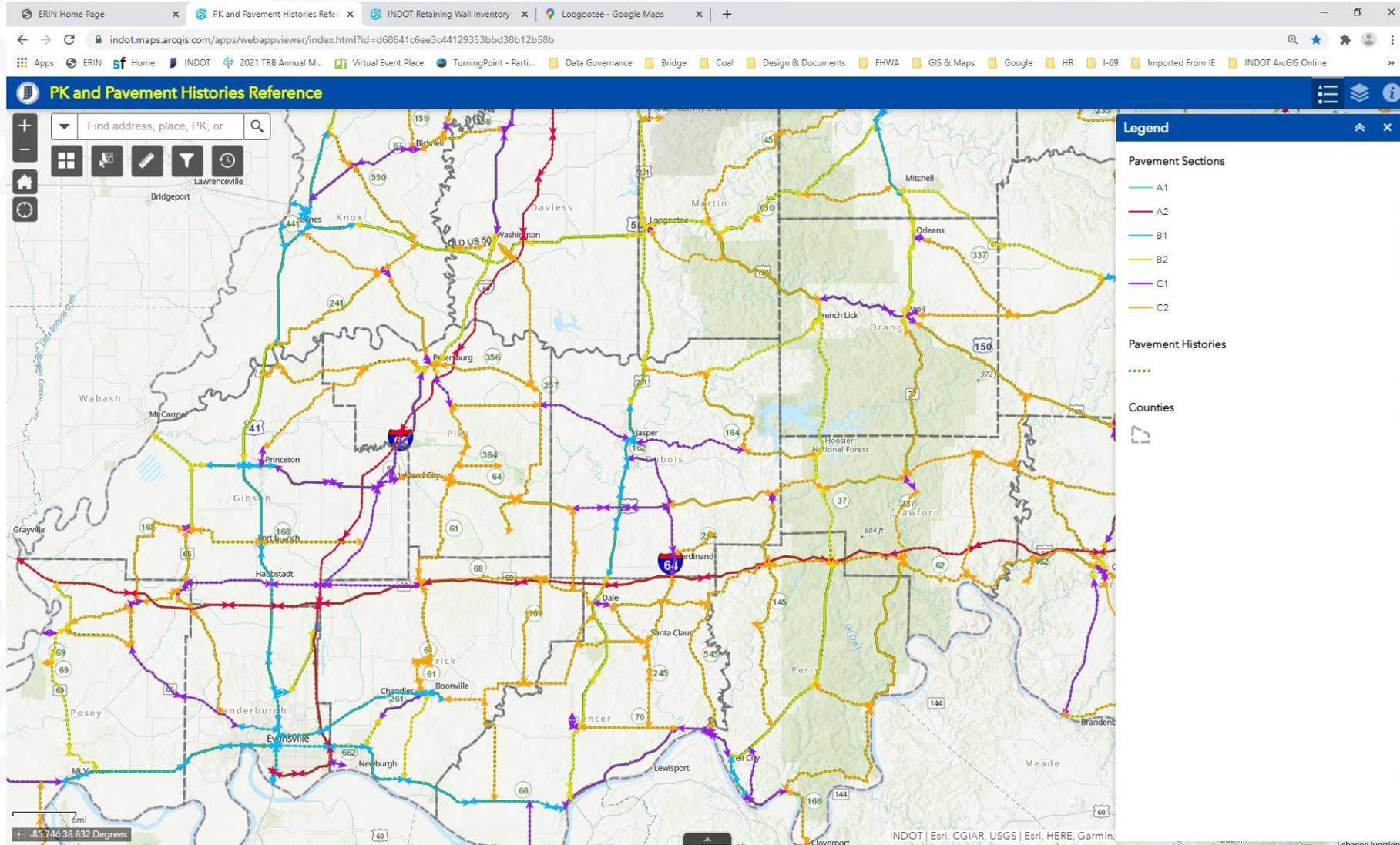
- Vincennes District By the Numbers

- Roadway Asset

- 1985 CL miles; 4,425 Lane miles

Category	CL Miles	Definition of Road Category
A1	0.00	A1 = urban interstates > 40k ADT (total)
A2	201.28	A2 = other interstates
B1	223.43	B1 = urban principal arterials or freeways > 5k ADT per lane
B2	330.04	B2 = other principal arterials or freeways
C1	273.44	C1 = other state highways, urban, >5k total ADT
C2	957.48	C2 = other state highways
Grand Total	1,985.66	

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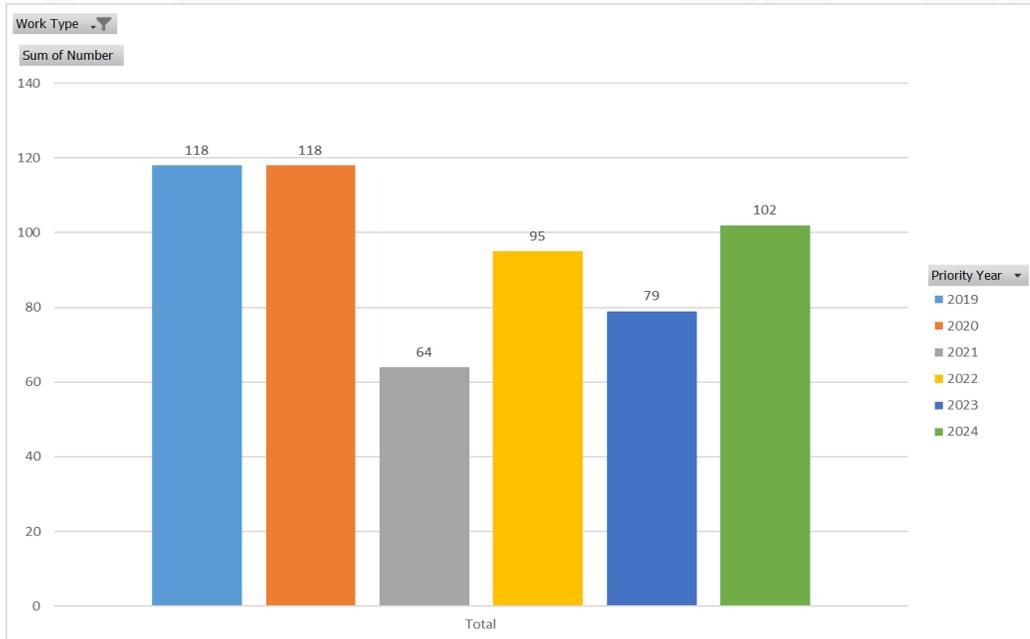
Remaining Assets

- 1054 Bridge
- 1895 Large Culvert $\geq 4'$
- 2,581 Small Pipes $< 4'$; Active Inlets : 7,468 ; Manholes: 1,524
- MSE / Retaining Walls : 398 locations
- The Vincennes District is responsible for maintaining 142 snow routes, 260 traffic signals, 186 flashers, 57,000 road signs, and 1,310 panel signs.
- There are five sub-districts (Evansville, Linton, Paoli, Tell City and Vincennes)
- 16 counties (Crawford, Daviess, Dubois, Gibson, Greene, Knox, Lawrence, Martin, Orange, Perry, Pike, Posey, Spencer, Sullivan, Vanderburgh and Warrick) within the Southwest District

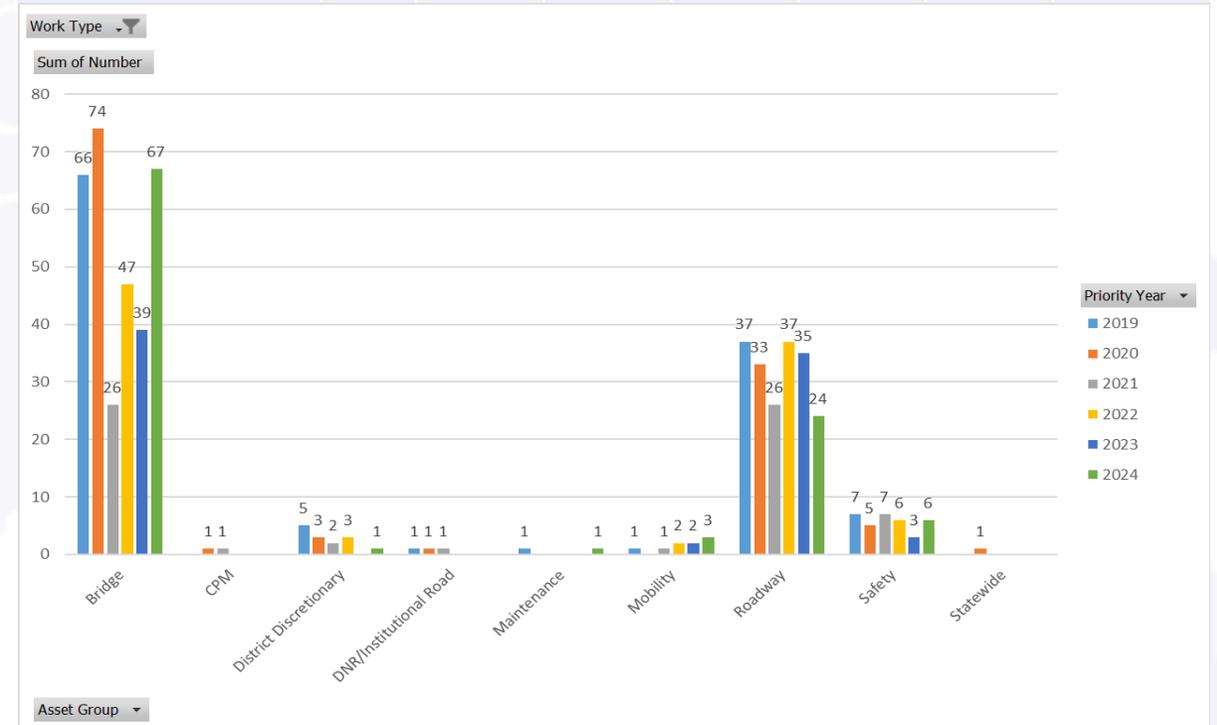
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- Projects 2019 – 2024

Year	2019	2020	2021	2022	2023	2024
# of Projects	118	118	64	95	79	102



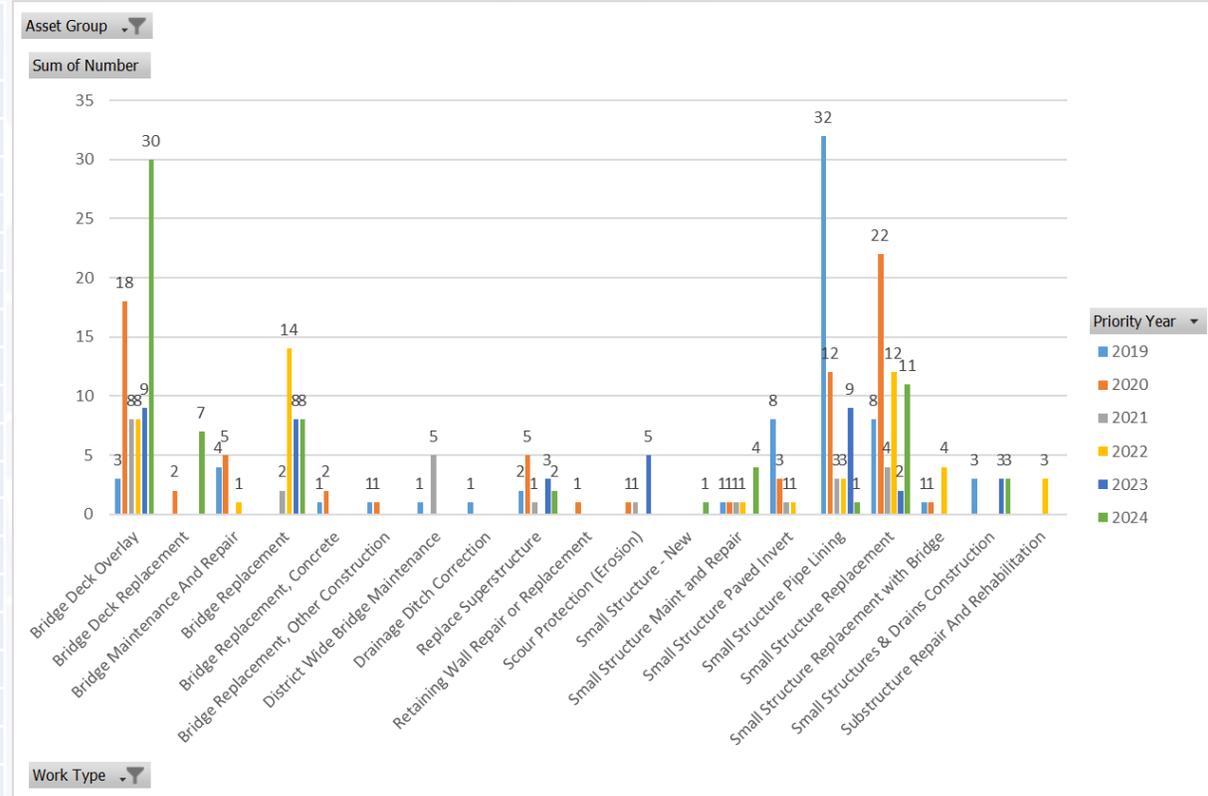
Asset Group / Funding	2019	2020	2021	2022	2023	2024	Grand Total
Bridge	66	74	26	47	39	67	319
CPM		1	1				2
District Discretionary	5	3	2	3		1	14
DNR/Institutional Road	1	1	1				3
Maintenance	1					1	2
Mobility	1		1	2	2	3	9
Roadway	37	33	26	37	35	24	192
Safety	7	5	7	6	3	6	34
Statewide		1					1
Grand Total	118	118	64	95	79	102	576



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Bridge Asset

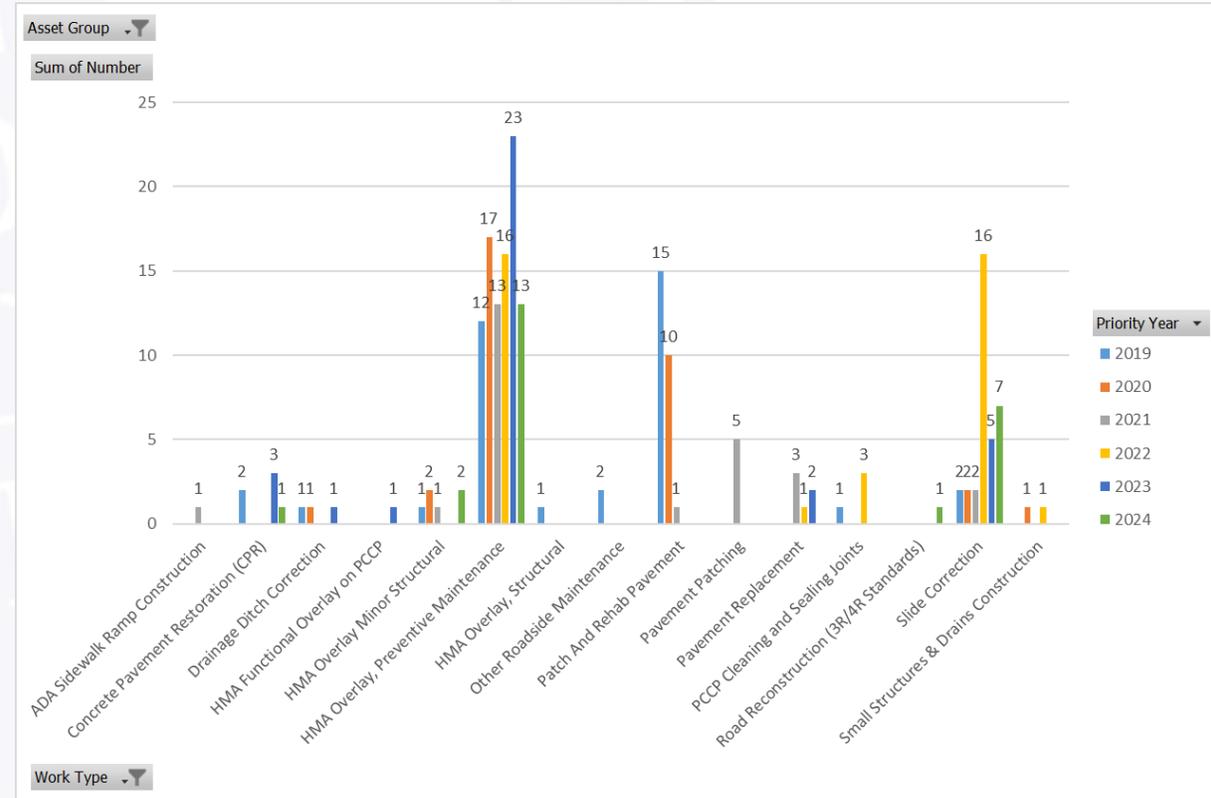
Bridge Work Type	2019	2020	2021	2022	2023	2024	Grand Total
Bridge Deck Overlay	3	18	8	8	9	30	76
Bridge Deck Replacement		2				7	9
Bridge Maintenance And Repair	4	5		1			10
Bridge Replacement			2	14	8	8	32
Bridge Replacement, Concrete	1	2					3
Bridge Replacement, Other Construction	1	1					2
District Wide Bridge Maintenance	1		5				6
Drainage Ditch Correction	1						1
Replace Superstructure	2	5	1		3	2	13
Retaining Wall Repair or Replacement		1					1
Scour Protection (Erosion)		1	1		5		7
Small Structure - New						1	1
Small Structure Maint and Repair	1	1	1	1		4	8
Small Structure Paved Invert	8	3	1	1			13
Small Structure Pipe Lining	32	12	3	3	9	1	60
Small Structure Replacement	8	22	4	12	2	11	59
Small Structure Replacement with Bridge	1	1		4			6
Small Structures & Drains Construction	3				3	3	9
Substructure Repair And Rehabilitation				3			3
Grand Total	66	74	26	47	39	67	319



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Roadway Asset

Roadway Work Type	2019	2020	2021	2022	2023	2024	Grand Total
ADA Sidewalk Ramp Construction			1				1
Concrete Pavement Restoration (CPR)	2				3	1	6
Drainage Ditch Correction	1	1			1		3
HMA Functional Overlay on PCCP					1		1
HMA Overlay Minor Structural	1	2	1			2	6
HMA Overlay, Preventive Maintenance	12	17	13	16	23	13	94
HMA Overlay, Structural	1						1
Other Roadside Maintenance	2						2
Patch And Rehab Pavement	15	10	1				26
Pavement Patching			5				5
Pavement Replacement			3	1	2		6
PCCP Cleaning and Sealing Joints	1			3			4
Road Reconstruction (3R/4R Standards)						1	1
Slide Correction	2	2	2	16	5	7	34
Small Structures & Drains Construction		1		1			2
Grand Total	37	33	26	37	35	24	192



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Our Southwest District is Tropical Weather and Sandy Beaches



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Perseverance

02-18,2021 landed on Mars @ 3 P.M. after 300 million miles it took off July 30,2020 (seven months journey). Main job : Seek signs of ancient life and collect samples of Rock and regolith (broken rock and soil) for possible return to Earth. Explore Jezero Crater at a cost of \$ 2.4 Billion (with a B)

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SR 66 Slides Between Grandview & Tell City



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SR 66 Slides RP 87.60

August 2011



April 2014



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SR 66 Slide Repair RP 87.60 Letting 04/01/2015

The screenshot displays the PathWeb application interface within a web browser. The browser's address bar shows the URL `pathweb.pathwayservices.com/in/sections/9158/locations/912`. The application header includes a navigation menu with 'Cycle 2020' and a 'Find Road Section' search bar. The main content area is divided into several panels:

- Forward View:** A large image showing a road winding through a wooded area. Below the image, the following data is displayed: District: 6 | Route: SR66 | Measure: 84.009 | Pavement Key: 60230 | Dir: Increasing | Date: 06/08/2020.
- Pavement View:** Two vertical panels labeled 'Image' and 'Elevation' showing detailed views of the road surface.
- 360:** A smaller version of the road view image, with a zoom control on the left side.
- Map:** A satellite map showing the road's location, with a blue dot indicating the current section. The map includes a scale bar and navigation controls.

At the bottom of the application, there is a toolbar with icons for home, settings, and navigation. The footer text reads: 'Earthstar Geographics | Pathway Services Inc. | Esri, HERE, Garmin | Powered by Esri'. A 'Show all' button is visible in the bottom right corner.

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- US 50 East of Loogootee



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SR 61 Boonville Bypass
Sulfates in Indiana (Ask Nayyar)



MSE Wall I 69 & SR 168



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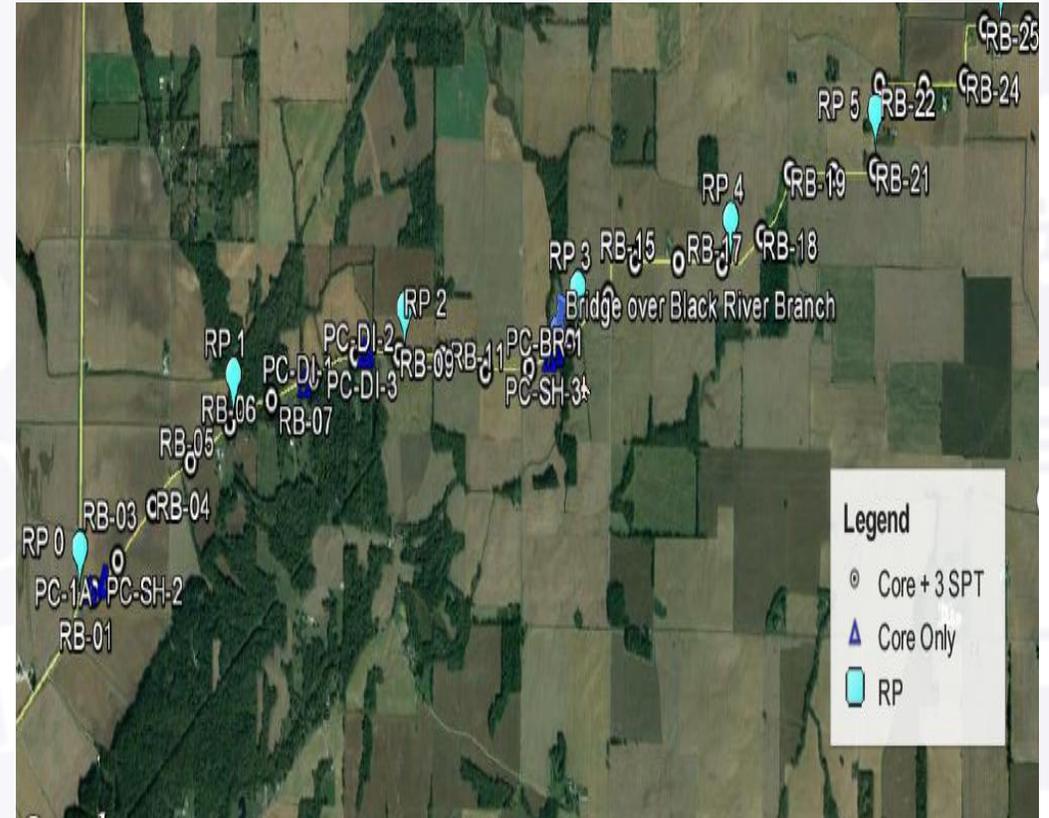
- Chip Seal Peeling (Stripping)



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Roadway Cores & Borings:

- Notifications to Pavement Asset Engineer
- Permit application / Notification for Lanes Restrictions
- Safety & MOT During Operation



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- Duane Decker, Vincennes District Scoping Manager
- For roadway projects, sometimes it is necessary to get cores and borings outside of the center of the travel lane (for old pavement widening) in order to obtain a complete evaluation even though this can be a more difficult setup for the drill rig.
- For slide projects, recommendations are often made to drain the soil or rock key, when it is not possible to do so given the depth of the key with relation to the surrounding ground surface elevations. Considerations should be provided if the key cannot be drained, including alternative treatments, if it is deemed necessary.
- Meeting the project schedule for slide projects has been difficult at times due to scheduling of the borings and geotechnical report too late into the project schedule. Acquiring ROW is often the most time-consuming portion of the schedule (18 to 24 months) and this cannot be started until after the geotechnical report is complete and the plans are prepared in accordance with the report.
- On a high note, the Vincennes District does work often with Joey Franzino and we do appreciate his responsiveness and willingness to consider the District's concerns.

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- Katrina Pinkstaff, Pavement Asset Engineer

- I have enjoyed working with all the Geotech department and on-call consultants so far. In-house staff have been timely when we ask for guidance/input on project issues. Consultants are timely with requests for review and accommodating to changes.
- I have noticed recently that the Geotech assignments for PM Overlay projects only include taking cores, no borings. Should we expect this to be norm for PM Overlays?
- There is some variety in how boring/coring plans are provided for review. Some provide a pdf map, some a KMZ file, some a table, or a combination of map and table. Personally, I like the KMZ with a table showing RP/Offset. I think some consistency would speed up review time.
- Filling of bore holes with “appropriate” material.
- Advocating Pavement Designer & Geotech Engineer to meet and ensure needs of cores or borings are needed.

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Thank you